



SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

Regional Collaboration to Address Global Challenges

區域性協作模式以應對全球性挑戰

California SB 375 and SCAG Experiences

加州參議院375號法案暨南加州政府洛杉磯大都市區域統籌規劃局的經驗

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Economic, Environmental, and Energy Discussion (EEED) Conference,
Institute of Policy and Management, Chinese Academy of Science
Beijing, China, July 16-18, 2012

Presentation Outline: A Regional Collaboration Process

1. About SCAG 簡介
2. Mega Trends, Global Challenges, and Regional Collaborations 大趨勢, 區域性協作, 全球性挑戰
3. SB 375 Background 背景
4. Statewide RTAC Process & Recommendations 區域減炭目標資詢委員會
5. SCS Development - Process & Policy Elements (SCAG Examples) 永續性發展社區策略- 發展過程及政策項目
6. SCAG 2012-2035 RTP/SCS 南加州都會區交通發展計劃及永續性發展社區策略
7. SCAG Governance (Covered by Ping Wang) 南加州政府洛杉磯大都會統籌規劃機構組織及決策參與架構
8. Technical Tools/New Models & Methodologies (SCAG Examples, Covered by Dr. Simon Choi) 技術工具/模型和分析方法

SCAG is Southern California Association of Governments

南加州地区政府协会 (SCAG)

区域政府议会 (Council of Governments)

南加州政府洛杉矶大都会统筹规划机构 (MPO)

SCAG Region

SCAG是美国最大的地区政府



**SCAG is nation largest MPO and COG,
and governed by a regional Council.**

Metropolitan Planning Organization (MPO)

CALIFORNIA

San Bernardino

Six Counties, 六个县

191 cities, 191个会员城市

Ventura

Los Angeles

Orange

Riverside

Imperial

Founded in 1965

Facts for SCAG Region

- 38,000 Square Miles (99,000平方公里)
- 18 millions population
- 49% of total State Population
- 5.9 million households
- 14 million registered vehicles
- 11 million licensed driver
- 10,457 freeway & carpool land miles
- \$60,141 median household income



SCAG Region vs. California



- The largest among the 18 MPOs in the state
- Includes almost half (48%) of the total population of the state,
- Includes almost half (46%) of the total jobs of the state

**16th largest
economy
in the world**

2010 GDP \$ 890 Billion

**Shares the
characteristics of
many nations**



SCAG Deals With

Regional Issues



Transportation

Goods
Movement

Housing

Air Quality

Land Use

Growth
Forecasting

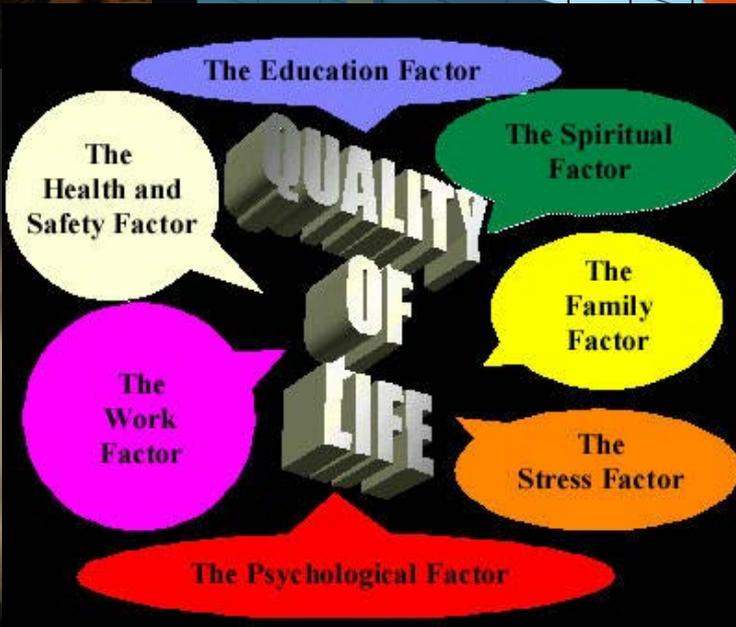
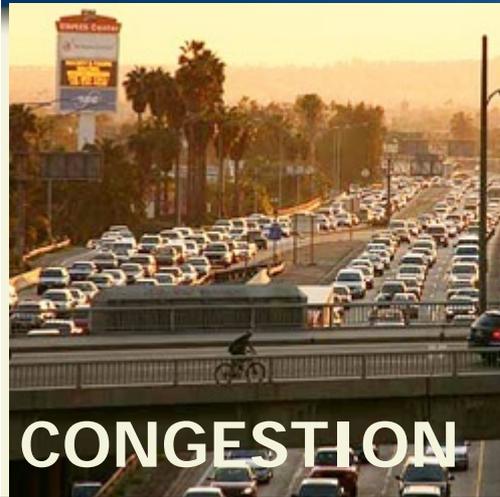
Funding

and More...

Mega Trends (大趨勢):

- A. Economy Structure** 經濟結構
- B. Trade and Globalization** 貿易及國際化
- B. Technology/Internet** 科技和互聯網
- C. Resources Supply/Constraints, Demand, Market Prices** 自然資源的供給限制
需求/市場價格
- D. Demography** 人口結構及數量
- E. Global Warming/Climate Change** 全球
暖化/氣候變化

Regional Challenges: As Results of Imbalance among Mega Trends



Global Warming 全球暖化?

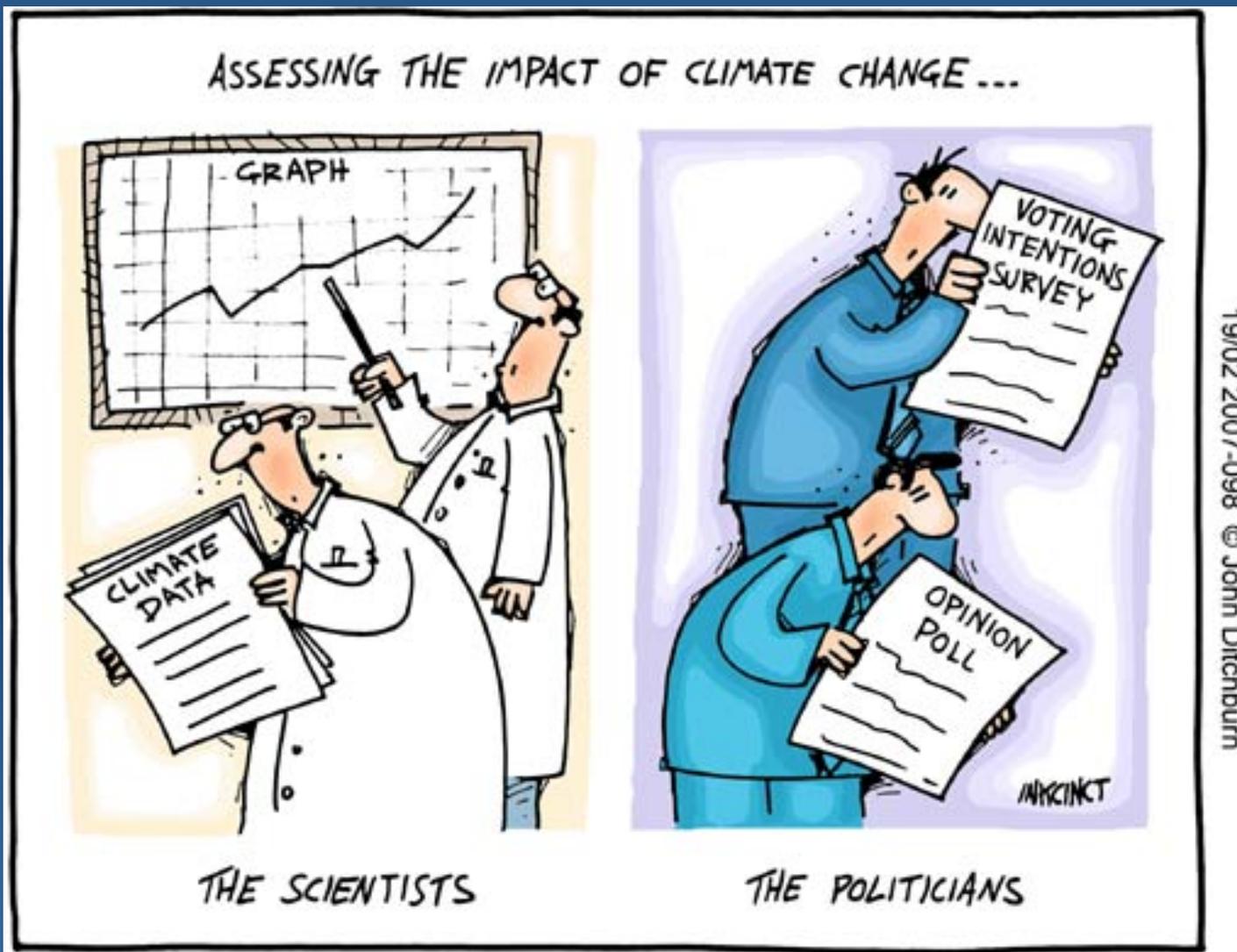


How About “Climate Change” Instead? 或僅只是氣候變化



Key Policy Debates

政策辯論取決於：科學或是輿論？



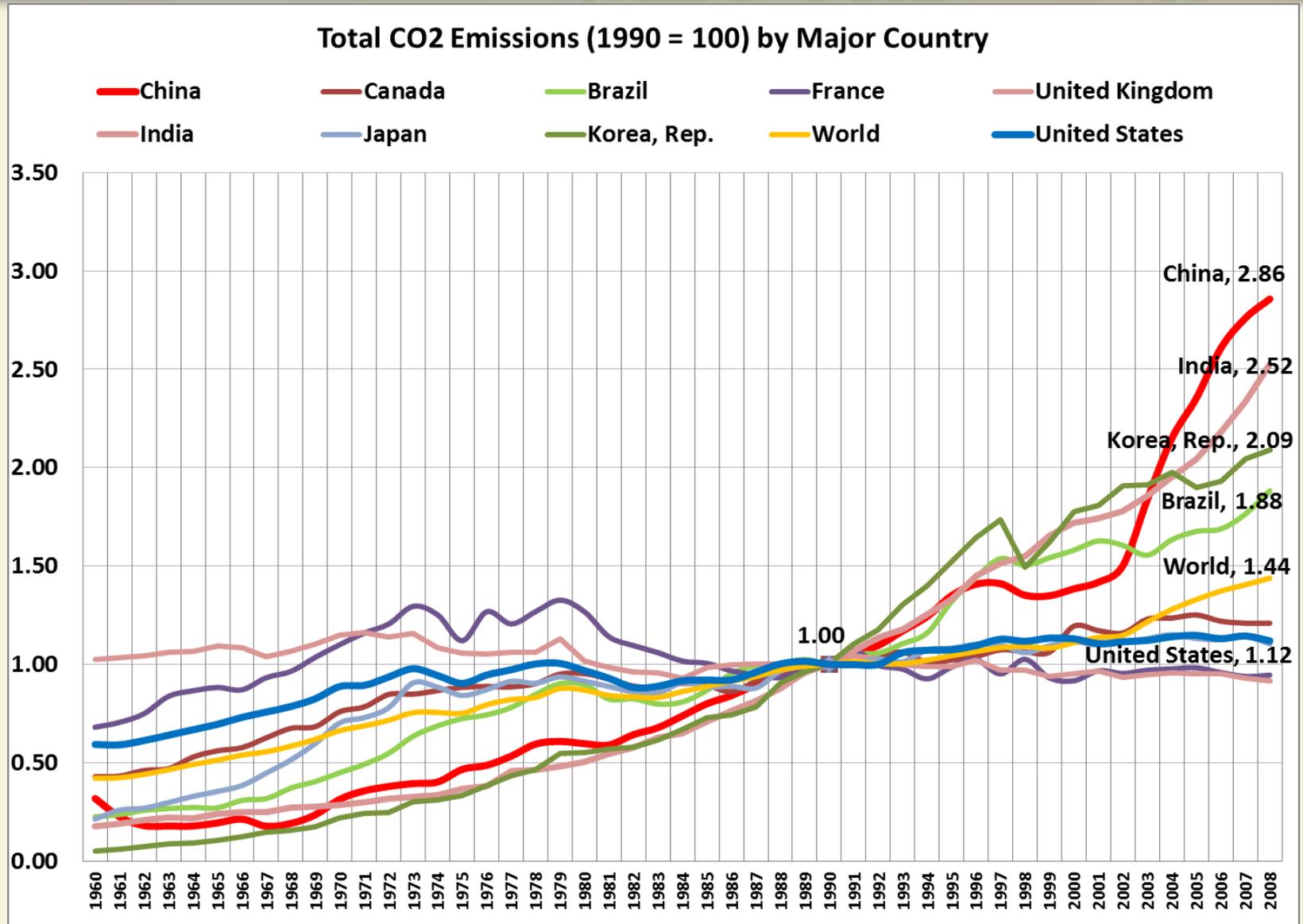
Common Elements of GHG Emissions Reduction Strategies and Planning

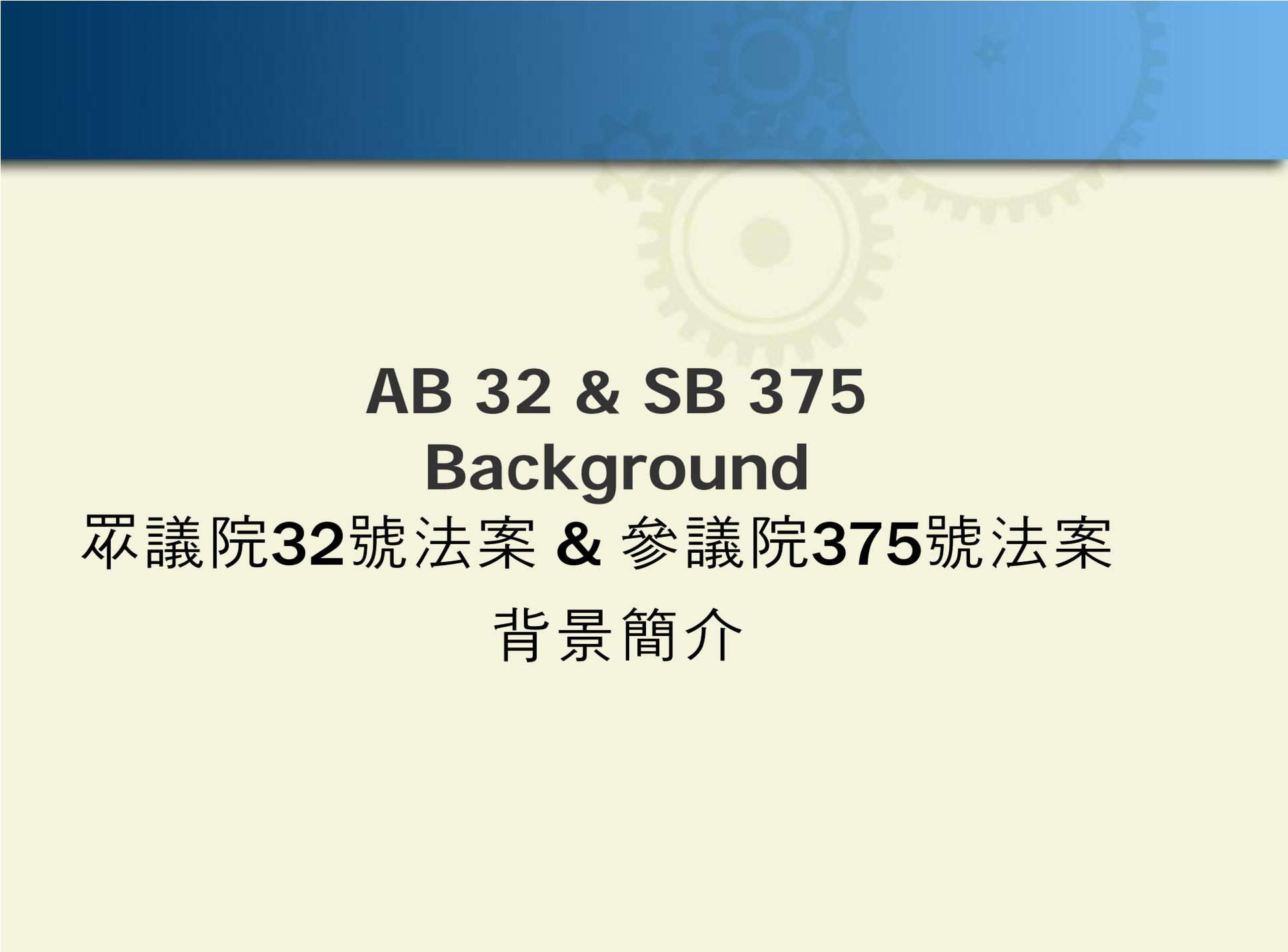
- **Common Vision (共同理念)**
- **Collaboration (協調共作) vs. cooperation**
- **GIS/Data & statistics (地理數據統計資訊)**
- **Growth & Projections (成長預測)**
- **Shift in global trends (大勢走向及改變)**
- **Model/Tools/Methodology (模型及技術工具和分析方法)**
- **Integrated approach: covers all economic sectors (全方位整體規劃)**
- **Geographic and socioeconomic differences (地理及社會人文經濟發展差異)**
- **Equity & Environmental Justice consideration (公平和環境正義的考量: 少數及弱勢族群包括少數族裔及低收入)**
- **Market vs. regulation (藉力市場機能及規則互補)**
- **Economic impact analysis (經濟影響分析)**

Examples of the GHG Emission Targets

- **Kyoto Protocol (京都議定) –1997 (~5% reduction of GHG from 1990 level by 2008-2010)**
- **CA Governor Executive Order S3-05—6/2005 (2000 level by 2010, 1990 level by 2020, and 80% below 1990 level by 2050) 加州州長行政命令**
- **CA AB 32 –2006 (Reach 1990 level by 2020) 眾議院32號法案**
- **SB 375 (參議院375號法案)–Implement a small portion of AB 32 requirements, set up GHG emission reduction targets from autos and light duty trucks for 18 CA MPOs in 2020 and 2035**

Total CO2 Emissions (1990 = 100) by Major Country

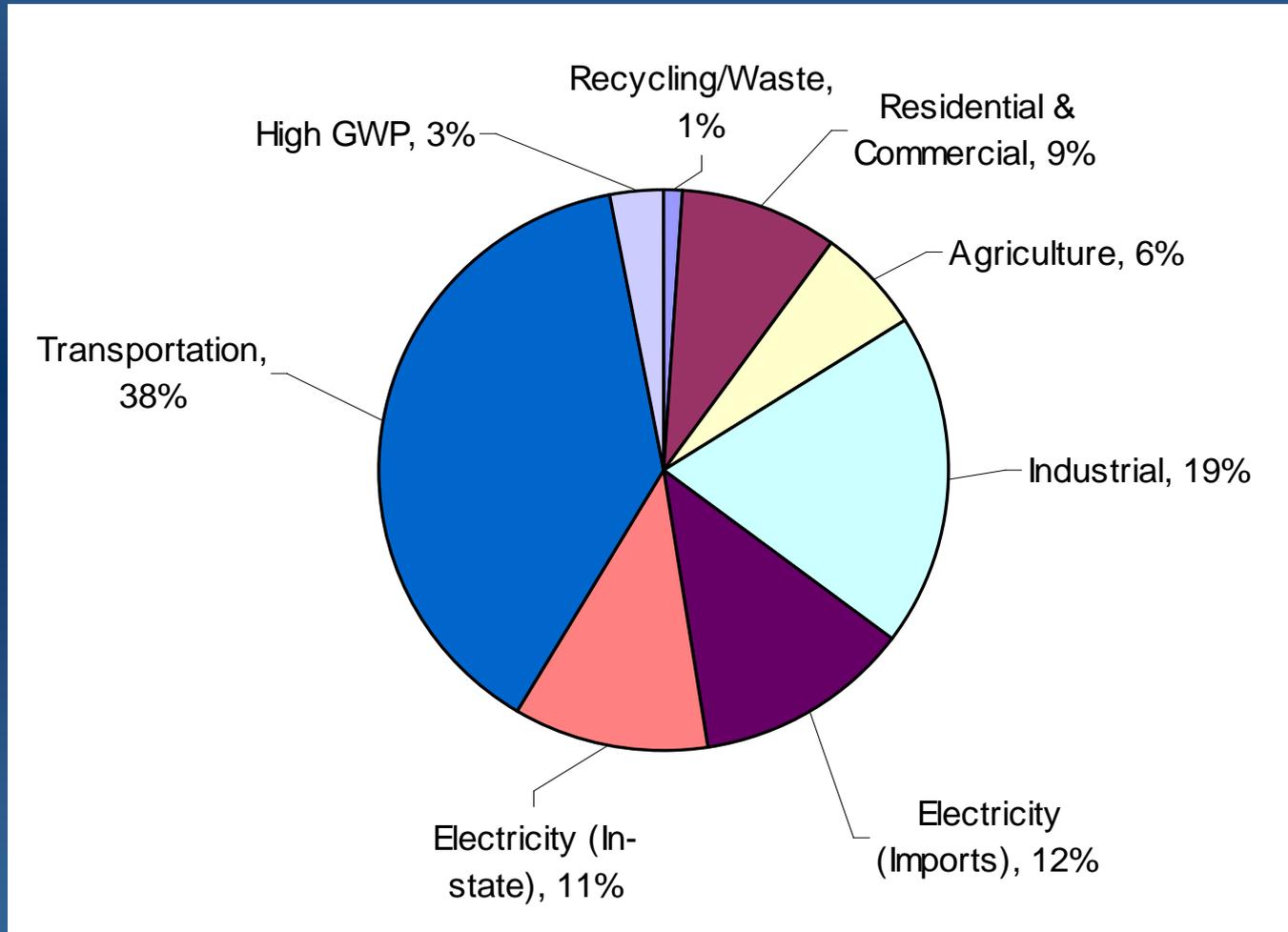




**AB 32 & SB 375
Background**

**眾議院32號法案 & 參議院375號法案
背景簡介**

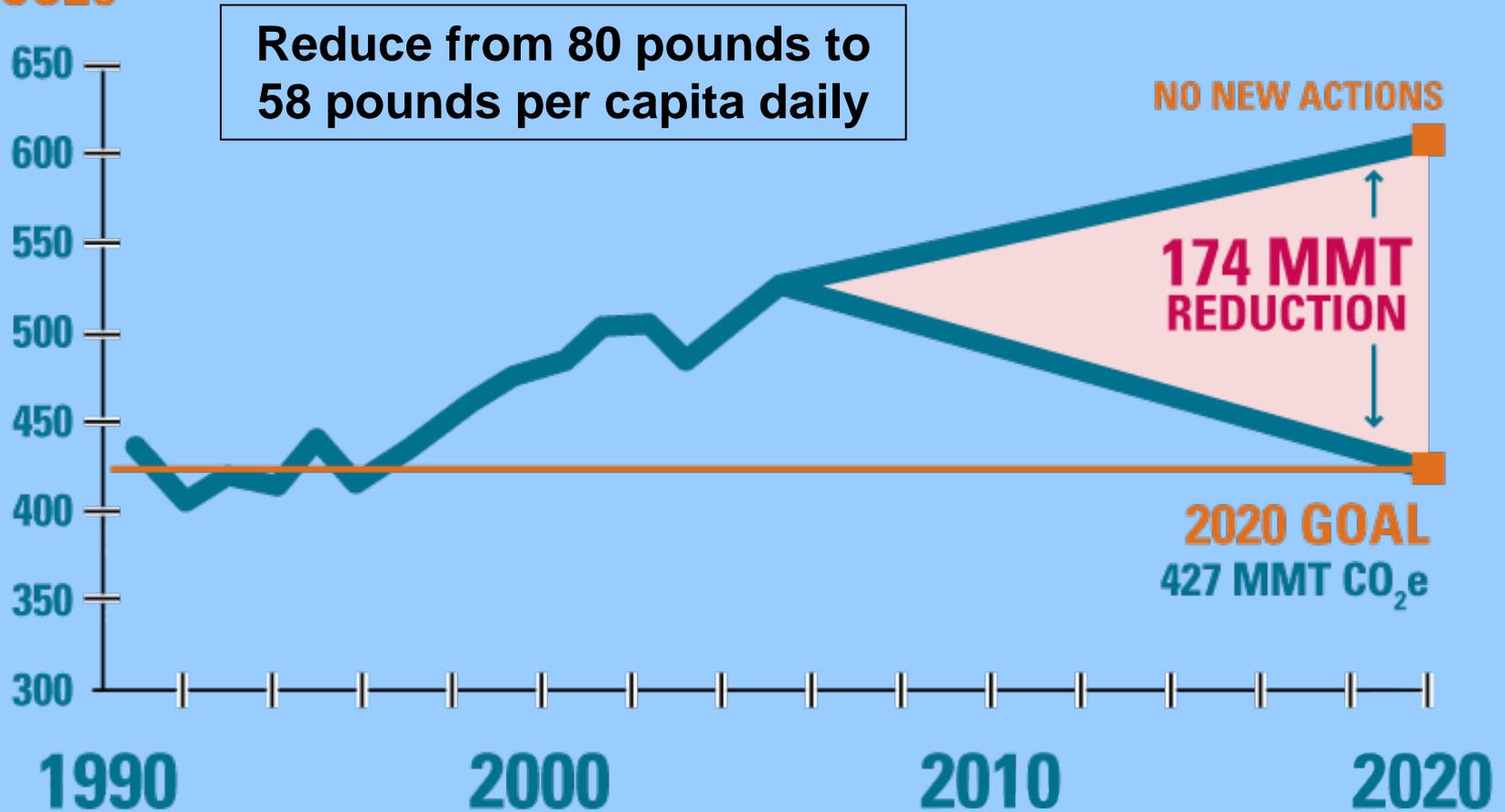
California GHG Emissions By Sector (2002-2004)



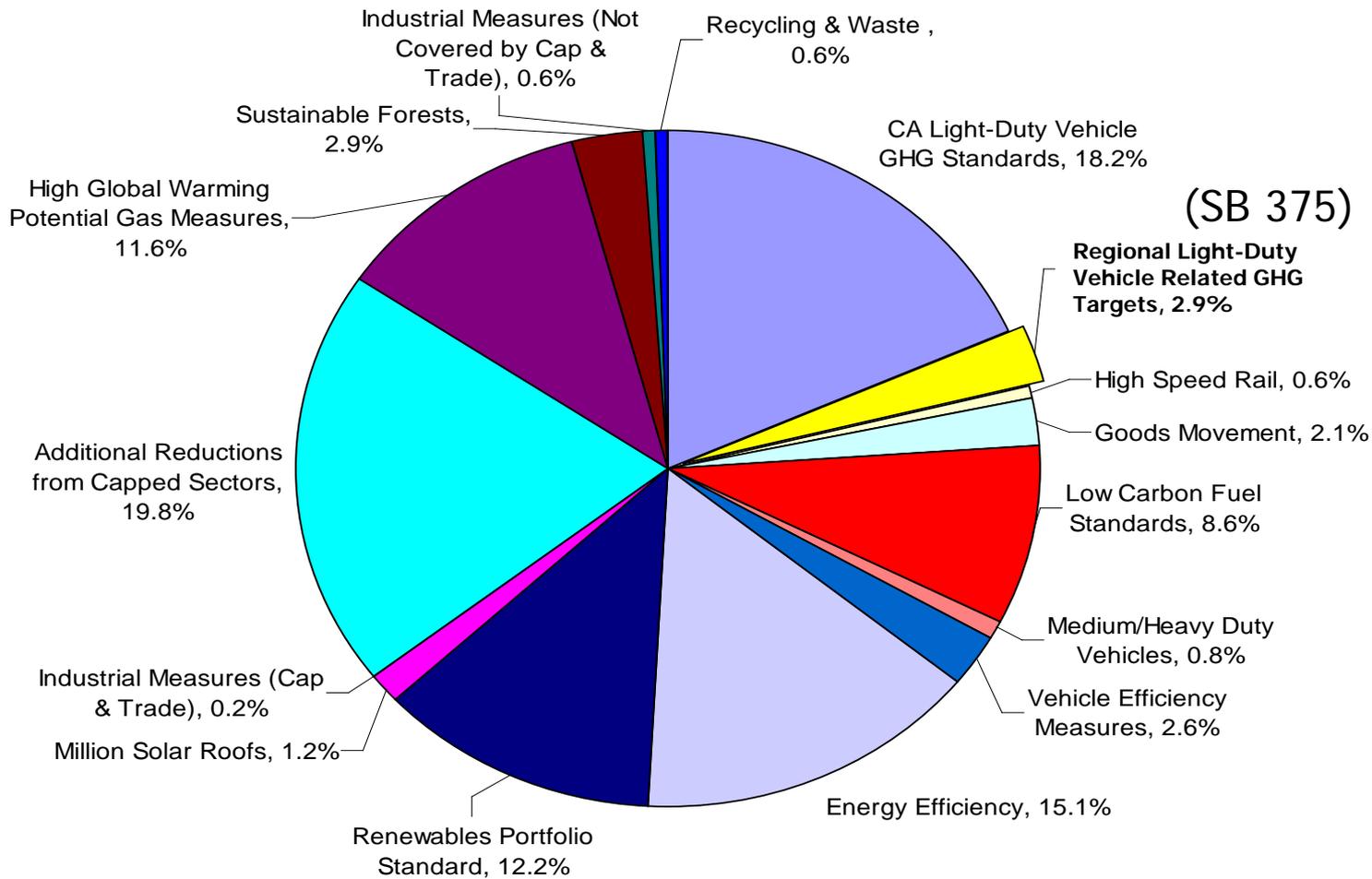
Source: California Air Resources Board

AB 32 GHG Reduction Goal

MMT CO₂e



AB 32 - GHG Reduction Estimates (-174 MMT) by 2020



Purpose of SB 375 參議院375號法案的目的

- Achieve specified GHG emission reduction targets in 2020 and 2035
 - from autos and light duty trucks
 - through land use and related policies
 - Implement AB 32 (a small portion)
- Integrate RTP with other regional plans and processes
 - Sustainable Communities Strategy (SCS)
 - Regional Housing Needs Assessment (RHNA)

History 歷史過程

- 9/2008 – SB 375 signed by Governor
- 1/1/2009 - SB 375 became law (38-month process)
- 1/23/2009 - Regional Targets Advisory Committee (RTAC) formed
- 9/30/2009 – RTAC's report to ARB
 - - Recommending factors and methodologies for setting regional GHG targets
- 9/30/2010 - ARB issued final GHG targets
- 10/2010 to 9/2011 – 16 workshops (by county) to obtain input for the draft SCS/SCS
- 12/2011 - Released draft 2012-2035 RTP/SCS & EIR for public review
- 12/2011 to 3/2012 - 3 public hearings and 6-12 informational meetings for elected officials
- 4/2012 – Regional Council adopted 2012-2035 RTP/SCS
- 6/2012 – ARB Approved SCAG's 2012-2035 RTP/SCS

Roles & Responsibilities--Air Resources Board

空氣資源廳角色與職責

- Establishes the Regional Targets Advisory Committee (RTAC)
- Reviews MPO technical methodologies
- Accepts/rejects an MPO's determination that its SCS would, if implemented, achieve its targets
- Sets and periodically updates GHG targets for 2020 and 2035

Roles & Responsibilities--MPOs

南加州政府洛杉矶大都会统筹规划机构角色與職責

- Prepare and adopt an SCS as part of the RTP
 - Develop methodologies and technical tools to estimate GHG emissions
 - Adopt public participation plan
 - Conduct informational meetings and public hearings
 - Develop and adopt a framework to address intra-regional relationships for sub-regional SCS, if necessary
 - Develop overall guidelines & create public participation plans for sub-regional SCS, if necessary

Roles & Responsibilities--Subregions

地方區域政府的角色與職責

- Collaborate with SCAG on regional SCS
- Option to propose sub-regional SCS
 - work together with county transportation commissions
 - develop sub-regional APS, if necessary

Roles & Responsibilities—Local Jurisdictions

地方縣市政府角色與職責

- **Input to SCAG on growth forecast as part of the integrated process**
- **Collaborate with respective sub-regions & CTCs on sub-regional SCS, if necessary**
- **Identify sufficient sites in Housing Element, and rezone certain sites if necessary, to accommodate the RHNA allocation for the local jurisdictions.**

Roles & Responsibilities—County Transportation Commissions

縣交通局角色與職責

- Ensure transportation projects to be consistent with SCS
- Collaborate on regional and/or sub-regional SCS

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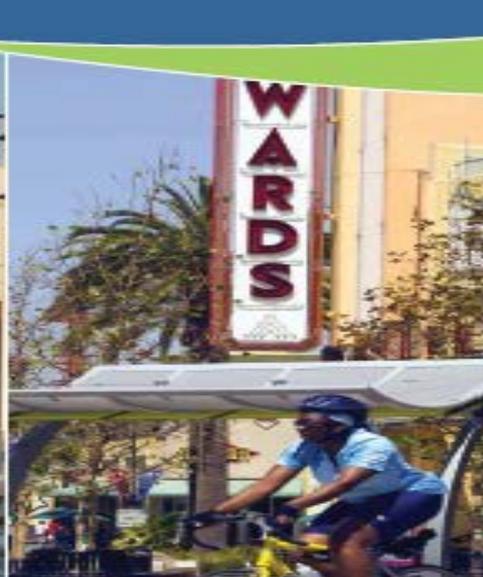
Statewide RTAC Process & Recommendations

區域減炭目標資詢委員會運作過程和建議

Regional Targets Advisory Committee (RTAC)

ARB Appointed Members (1/23/09)

- **Andrew Chesley**, Executive Director, San Joaquin Council of Governments
- **Stuart Cohen**, Executive Director, TransForm
- **Greg Devereaux**, City Manager, City of Ontario
- **Roger Dickinson**, Supervisor, County of Sacramento
- **Stephen Doyle**, President, Brookfield San Diego Builders, Inc.
- **Amanda Eaken**, Policy Analyst, NRDC
- **Gary Gallegos**, Executive Director, SANDAG
- **Steve Heminger**, Executive Director, Bay Area MTC
- **Richard Katz**, Board Member, Los Angeles County MTA
- **Mike McKeever**, Executive Director, SACOG
- **Arthur Leahy**, Chief Executive Officer, OCTA
- **Shari Libicki**, Principal, Environ Environmental Consultants
- **Pete Parkinson**, Vice President of Policy and Legislation, APA, California Chapter
- **Linda Parks**, Supervisor, County of Ventura and SCAG Regional Council Member
- **Manuel Pastor Jr.**, Professor of Geography and American Studies and Ethnicity, USC
- **Mike Rawson**, Co-Director, Public Interest Law Project
- **Barry Wallerstein**, Executive Officer, SCAQMD
- **Jerry Walters**, Principal, Fehr & Peers Transportation Consultants
- **Carol Whiteside**, Founder and President Emeritus, Great Valley Center
- **Michael Woo**, Los Angeles City Planning Commissioner
- **Jim Wunderman**, President and Chief Executive Officer, Bay Area Council



RECOMMENDATIONS OF THE REGIONAL TARGETS ADVISORY COMMITTEE (RTAC) PURSUANT TO SENATE BILL 375

A Report to the California Air Resources Board

RTAC Recommendations

- A. Target Setting Process 減炭目標設定過程
- B. Target Setting Methods, Data, and Tools 減炭目標設定方法,數據,模型
- C. Implementation 空氣資源廳執行制定考量

RTAC Recommendations (cont'd)

A. Target Setting Process 減炭目標設定過程

- MPO/ARB Interactive Process (行政機構互動過程)
 - including affected air districts and county transportation commissions
- Expert Consultation (專家諮詢)
- Stakeholder Process (利益團體運作過程) (e.g., public health, affordable housing & home builders)
- State Agency Interactive Process (行政機構互動過程) (ARB, Caltrans, HCD, OPR & California Transportation Commission)

RTAC Recommendations (Cont'd)

B. Target Setting Methods and Tools (減炭目標設定方法, 數據, 模型)

- Base Year 2005 (基準年)
- Per capita as metric (人均)
- Use Consistent (一致性) Key Assumptions among MPOs Where Appropriate
- Use of Empirical Studies (實證研究) and Modeling
- Allow Flexibility (伸縮性) in Achieving Targets
- Development of a List of Best Management Practices (最佳管理實踐)

RTAC Recommendations (cont'd)

C. Implementation

- Address Housing and Social Equity (e.g., affordability & displacement) 公平和環境正義的考量
- Address Local Government Funding Needs 地方政府財政負擔及需求
- Provide Incentives for Local Implementation 獎勵地方政府執行推動減炭措施
- Conduct Robust Public Education and Outreach 推廣教育
- Highlight Co-benefits of Sustainable Communities Strategies 著重非經濟性社會效益
- Develop Performance Monitoring System 監督考評執行成效
- Continue Model Enhancements 持續發展更完善評估規劃數據模型

MPO Planning Working Group

A. Compositions

MPOs, ARB, HCD (住宅社區發展部), SGC (戰略性成長委員會), OPR (研究規劃考核室) & Caltrans (交通部)

B. Tasks

- Resolve funding issues 執行經費問題
- Coordinate among competing state policies 協調互競和不協調的卅政府政策
- Coordinate multiple planning efforts for RTP/SCS and RHNA 整合協調多層次的重複規劃

Foster consistency and advancement of forecasting, data, model and tools 培育發展和諧一致性的預測數據資料及規劃模型工具

- Coordinate performance measures 協調執行績效評估

ARB Staff Release

**Draft Regional Greenhouse Gas Emission Reduction Targets
For Automobiles and Light Trucks
Pursuant to Senate Bill 375**

June 30, 2010

State of California
AIR RESOURCES BOARD

STAFF REPORT

PROPOSED

**REGIONAL GREENHOUSE GAS EMISSION REDUCTION
TARGETS FOR AUTOMOBILES AND LIGHT TRUCKS PURSUANT
TO SENATE BILL 375**

ARB Final GHG Targets for MPO Regions

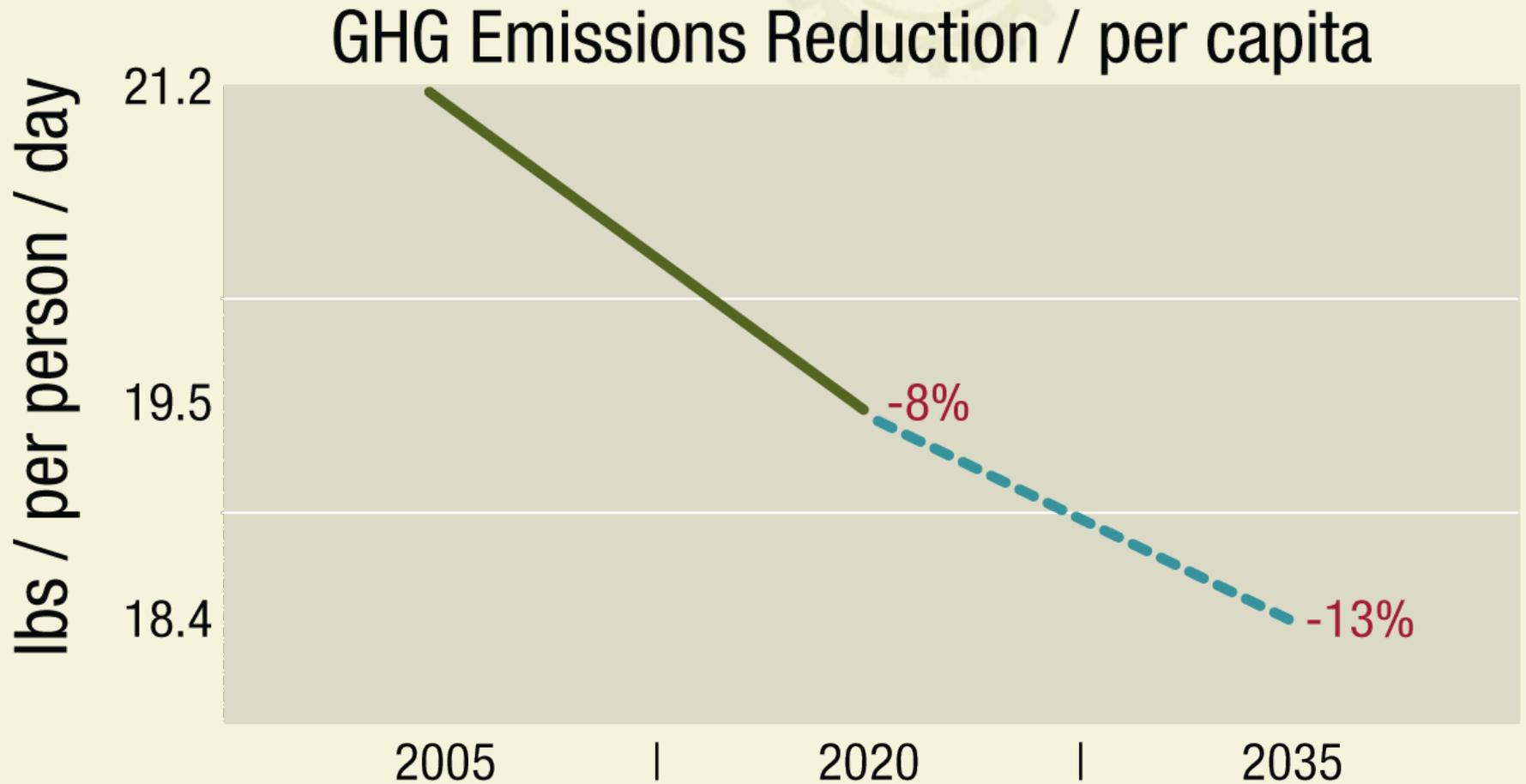
Approved Regional Greenhouse Gas Emission Reduction Targets MPO Region

Targets *

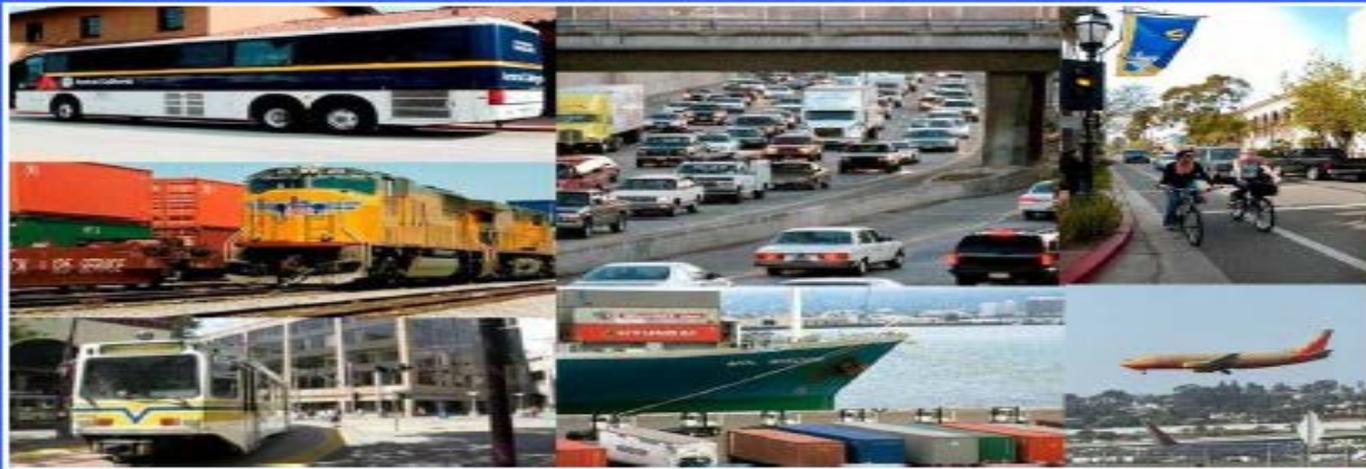
	2020	2035
SCAG	-8	-13
MTC	-7	-15
SANDAG	-7	-13
SACOG	-7	-16
8 San Joaquin Valley MPOs	-5	-10
6 Other MPOs		
Tahoe	-7	-5
Shasta	0	0
Butte	+1	+1
San Luis Obispo	-8	-8
Santa Barbara	0	0
Monterey Bay	0	-5

* Targets are expressed as percent change in per capita greenhouse gas emissions relative to 2005.

GHG Targets for SCAG Region (You and Me)



2010 California Regional Transportation Plan Guidelines



California Transportation Commission



**Description of Methodology for ARB Staff Review of Greenhouse Gas
Reductions from Sustainable Communities Strategies (SCS)
Pursuant to SB 375**

July 2011


**ASSOCIATION of
GOVERNMENTS**
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Riverside County Transportation Commission: Robert Stone, Hemet

Ventura County Transportation Commission: Bill Davis, Santa Valley

SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

COMPLIANCE PROCEDURE FOR ENVIRONMENTAL JUSTICE IN THE TRANSPORTATION PLANNING PROCESS

OCTOBER 2000



Southern California Association of Governments
PUBLIC PARTICIPATION PLAN
Amendment No. 3

Adopted January 5, 2012





REGIONAL TRANSPORTATION PLAN
2012-2035 RTP
 SUSTAINABLE COMMUNITIES STRATEGY
 Towards a Sustainable Future



Southern California Association of Governments

Hasan Ikhtrata
 Executive Director
SCAG

**TECHNICAL EVALUATION OF THE GREENHOUSE
GAS EMISSION REDUCTION QUANTIFICATION FOR
THE SOUTHERN CALIFORNIA ASSOCIATION OF
GOVERNMENTS' SB 375 SUSTAINABLE
COMMUNITIES STRATEGY**

May 2012

California Environmental Protection Agency

 **Air Resources Board**

Modeling Parameters	2005 If available	2008 Base Year	2020		2035		Data Source(s)
			With Project ¹	Without Project ²	With Project ¹	Without Project ²	
DEMOGRAPHIC							
Total population (000s)	17,498	17,892	19,700	19,700	22,146	22,146	SCAG 2012 RTP Growth Forecast
Group quarters (000s)	334	337	350	350	367	367	SCAG 2012 RTP Growth Forecast
Total number of households (000s)	5,650	5,814	6,462	6,462	7,323	7,323	SCAG 2012 RTP Growth Forecast
Persons per household	3.04	3.02	2.99	2.99	2.97	2.97	SCAG 2012 RTP Growth Forecast
Auto ownership per household	1.97	1.97	1.95	1.95	1.89	1.92	SCAG Travel Demand Department
Total number of jobs (000s)	7,771	7,738	8,417	8,417	9,436	9,436	SCAG 2012 RTP Growth Forecast
Average unemployment rate (%)	5.1	7.3	5.0	5.0	5.0	5.0	SCAG 2012 RTP Growth Forecast
Weighted Median household income (\$)	52,712	52,811	52,350	52,350	52,222	52,234	SCAG 2012 RTP Growth Forecast
LAND USE							
Total Households (000s)	5,650	5,814	6,462	6,462	7,323	7,323	
Total acreage developed	1,695,360	1,767,680	2,003,840	2,064,000	2,209,920	2,396,160	SCAG Rapidfire
Total acreage available for new development	N/A	4,115,454	N/A	3,546,322	3,615,831	3,218,711	SCAG

Modeling Parameters	2005 If available	2008 Base Year	2020		2035		Data Source(s)
			With Project ¹	Without Project ²	With Project ¹	Without Project ²	
All transit stations and stops ^[3]							
Percent housing within 1/4 mile of transit stations	N/A	66.9	65.8	64.9	65.1	62.2	SCAG Comprehensive Planning
Percent housing within 1/2 mile of transit stations	N/A	83.8	82.5	81.8	82.1	79.2	SCAG Comprehensive Planning
Percent employment within 1/4 mile of transit stations	N/A	75.6	74	74.2	72.3	73.1	SCAG Comprehensive Planning
Percent employment within 1/2 mile of transit stations	N/A	90	88.9	89.4	87.4	88.5	SCAG Comprehensive Planning
Transit stations and stops in HQTAs ^[4]							
Percent housing within 1/2 mile of transit stations and stops	N/A	39.9	44.2	39.2	51.1	37.5	SCAG Comprehensive Planning
Percent employment within 1/2 mile of transit stations	N/A	49	55.7	49.4	61.7	47.6	SCAG Comprehensive Planning
Fixed guideway transit station							
Percent housing within 1/4 mile of transit stations	N/A	1.5	2.4	1.7	3	1.8	SCAG Comprehensive Planning
Percent housing within 1/2 mile of transit stations	N/A	5.6	8.5	6.1	10.1	6.3	SCAG Comprehensive Planning
Percent employment within 1/4 mile of transit stations	N/A	4	6.7	4.2	6.8	4.1	SCAG Comprehensive Planning
Percent employment within 1/2 mile of transit stations	N/A	10.3	16.5	11.2	17.3	10.8	SCAG Comprehensive Planning
Multifamily and Other Households (000s)	2,560	2,621	2,935	2,935	3,645	3,645	SCAG 2012 RTP Growth Forecast

Modeling Parameters	2005 If available	2008 Base Year	2020		2035		Data Source(s)
			With Project ¹	Without Project ²	With Project ¹	Without Project ²	
Single family Households (000s) units	3,090	3,193	3,527	3,527	3,678	3,678	SCAG 2012 RTP Growth Forecast
Acreage of land zoned (used and available) for mixed use	N/A	1,245	N/A	N/A	129,535	129,535	SCAG Existing And General Plan Land Use
High Quality Transit Areas							
Percent new housing (08-20) in HQTA ^[5]	N/A	N/A	34.9	25.6	--	--	SCAG Comprehensive Planning
Percent new housing (20-35) in HQTA ^[6]			--	--	59.5	31.4	
Average density- dwelling units per acre Per residential land designations of General Plan (residential land, mixed use & specific Plan)	N/A	6.09	6.74	6.56	7.54	7.24	SCAG (LSPT Model estimation)
TRANSPORTATION SYSTEM							
Freeway general purpose lanes - mixed flow, auxiliary, etc. (lane miles)	10,795	10,919	11,493	11,078	11,811	11,103	SCAG Travel Demand Department
Freeway managed lanes--HOV, HOT, Tolled, etc. (lane miles)	1,082	1,205	2,121	1,574	2,931	1,609	
Major Arterial / Expressway (lane miles)	16,139	16,203	17,665	16,595	17,866	16,595	
Minor Arterial (lane miles)	21,076	21,218	22,592	21,590	23,084	21,590	
Collectors (lane miles)	12,196	12,221	13,019	12,422	13,475	12,422	
Locals (lane miles)	5114	5117	5117	5126	5131	5126	
Regular transit bus operation miles	644,263	644,555	676,835	647,045	707,405	647,045	
Bus rapid transit bus operation miles	NA	6,089	21,384	14,276	21,384	14,276	
Express bus operation miles	102,510	103,923	111,533	103,911	153,485	103,911	
Transit rail operation miles	32,431	32,431	108,549	61,411	129,226	61,411	
Bike lane miles	NA	4,315	6,000	5,358	10,122	6,661	

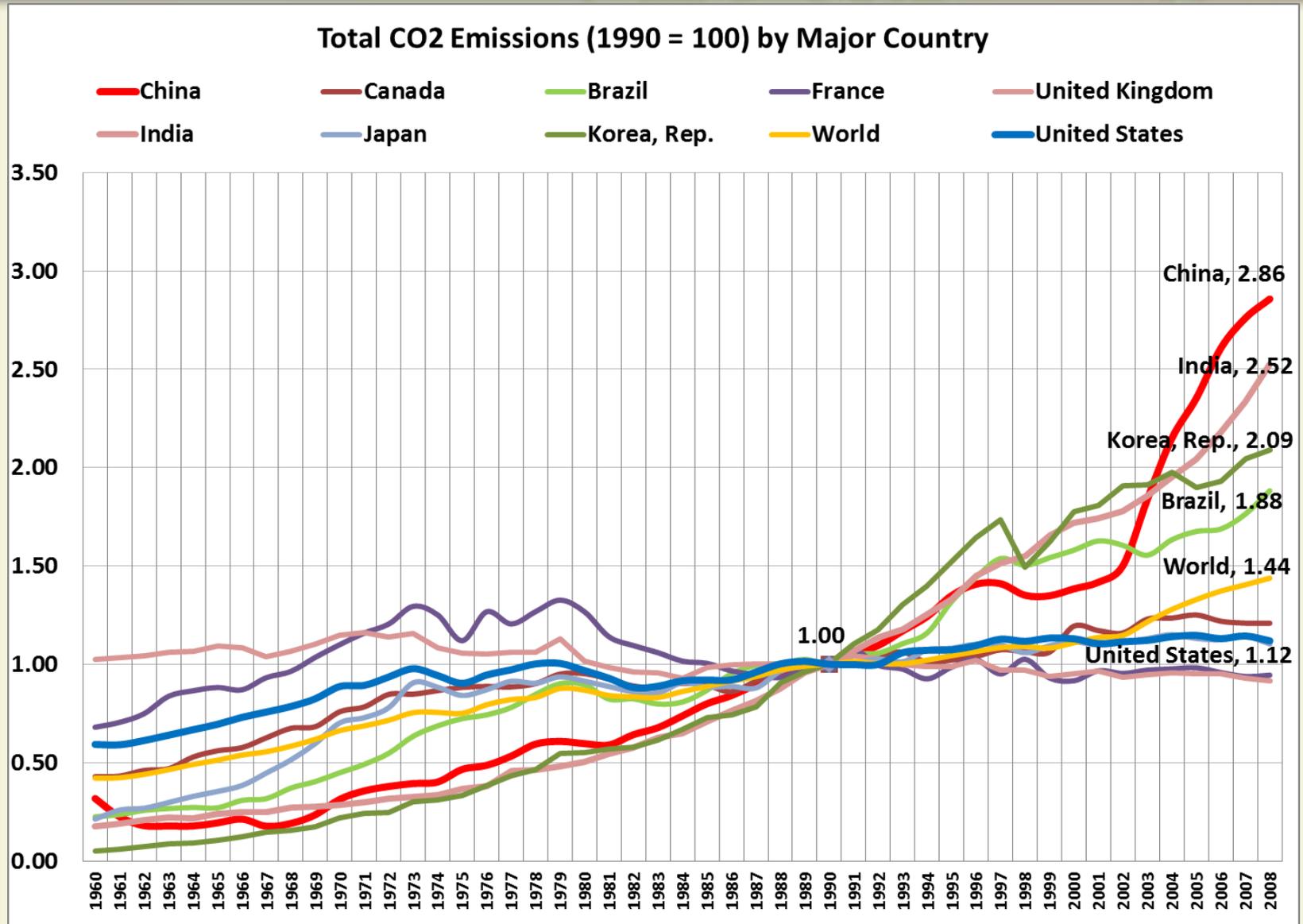
Modeling Parameters	2005 If available	2008 Base Year	2020		2035		Data Source(s)
			With Project ¹	Without Project ²	With Project ¹	Without Project ²	
TRIP DATA							
Number of trips by trip purpose							
- Home-based work	11,796,849	11,701,523	12,011,687	13,037,425	12,279,715	13,844,210	SCAG Travel Demand Department
- Home-based school	4,851,705	4,851,705	5,050,500	5,050,500	5,527,741	5,527,741	
- Home-based college	687,314	687,731	702,497	702,768	742,895	743,414	
- Home-based shopping	5,148,956	5,349,090	5,916,734	5,923,185	6,632,454	6,674,703	
- Home-based recreational	4,741,362	4,922,616	5,397,740	5,407,317	6,027,619	6,081,044	
- Home-based others	13,319,745	13,836,653	15,078,174	15,107,240	16,849,850	17,023,415	
- Non home-based other	17,544,516	18,031,179	19,883,895	19,905,021	22,090,943	22,144,982	SCAG Travel Demand Department
By travel mode							
Average auto trip length (miles)	11.4	11	10.8	11	10.5	10.7	
Average walk trip length (miles)							
Average bike trip length (miles)	3.02	3.09	3.15	3.14	3.16	3.11	SCAG Travel Demand Department
Average transit trip length (miles) (includes access/egress distance)	11.3	11.6	12.2	12.4	13.4	13.0	
Average auto travel time (minutes)	19.3	18.6	17.5	18.2	16.4	18.7	
Average walk travel time (minutes)	N/A	N/A	N/A	N/A	N/A	N/A	
Average bike travel time (minutes)	18.1	18.6	18.9	18.8	19	18.7	SCAG Travel Demand Department
Average transit travel time (minutes) (includes access/egress time and wait time)	63.9	64.9	64.9	66.7	65.5	69.1	

Modeling Parameters	2005	2008	2020		2035		Data Source(s)
	If available	Base Year	With Project ¹	Without Project ²	With Project ¹	Without Project ²	
PERCENT PASSENGER TRAVEL MODE SHARE (whole day)							
SOV	46.54%	45.24%	44.48%	45.12%	43.41%	44.53%	SCAG Travel Demand Department
HOV	41.87%	42.66%	43.30%	42.80%	43.86%	43.13%	
Public transit (Regular Bus)	1.71%	1.71%	1.64%	1.70%	1.71%	1.64%	
Public transit (Express Bus)	0.19%	0.19%	0.18%	0.18%	0.18%	0.18%	
Public transit (BRT)	0.00%	0.05%	0.04%	0.05%	0.04%	0.05%	
Public transit (Rail)	0.44%	0.46%	0.69%	0.55%	0.76%	0.57%	
Non-Motorized: Bike	0.91%	0.93%	0.96%	0.95%	0.99%	0.97%	
Non-Motorized: Walk	8.35%	8.58%	8.71%	8.64%	9.00%	8.93%	
PERCENT PASSENGER TRAVEL MODE SHARE (peak period)							
SOV	44.67%	43.59%	42.53%	43.34%	41.37%	42.59%	SCAG Travel Demand Department
HOV	42.99%	43.79%	44.55%	43.90%	45.16%	44.32%	
Public transit (Regular Bus)	1.92%	1.91%	1.82%	1.90%	1.93%	1.83%	
Public transit (Express Bus)	0.23%	0.23%	0.22%	0.23%	0.21%	0.22%	
Public transit (BRT)	0.00%	0.04%	0.05%	0.05%	0.04%	0.05%	
Public transit (Rail)	0.62%	0.66%	0.95%	0.79%	1.08%	0.83%	
Non-Motorized: Bike	0.99%	1.01%	1.04%	1.04%	1.07%	1.06%	
Non-Motorized: Walk	8.58%	8.77%	8.83%	8.76%	9.14%	9.10%	

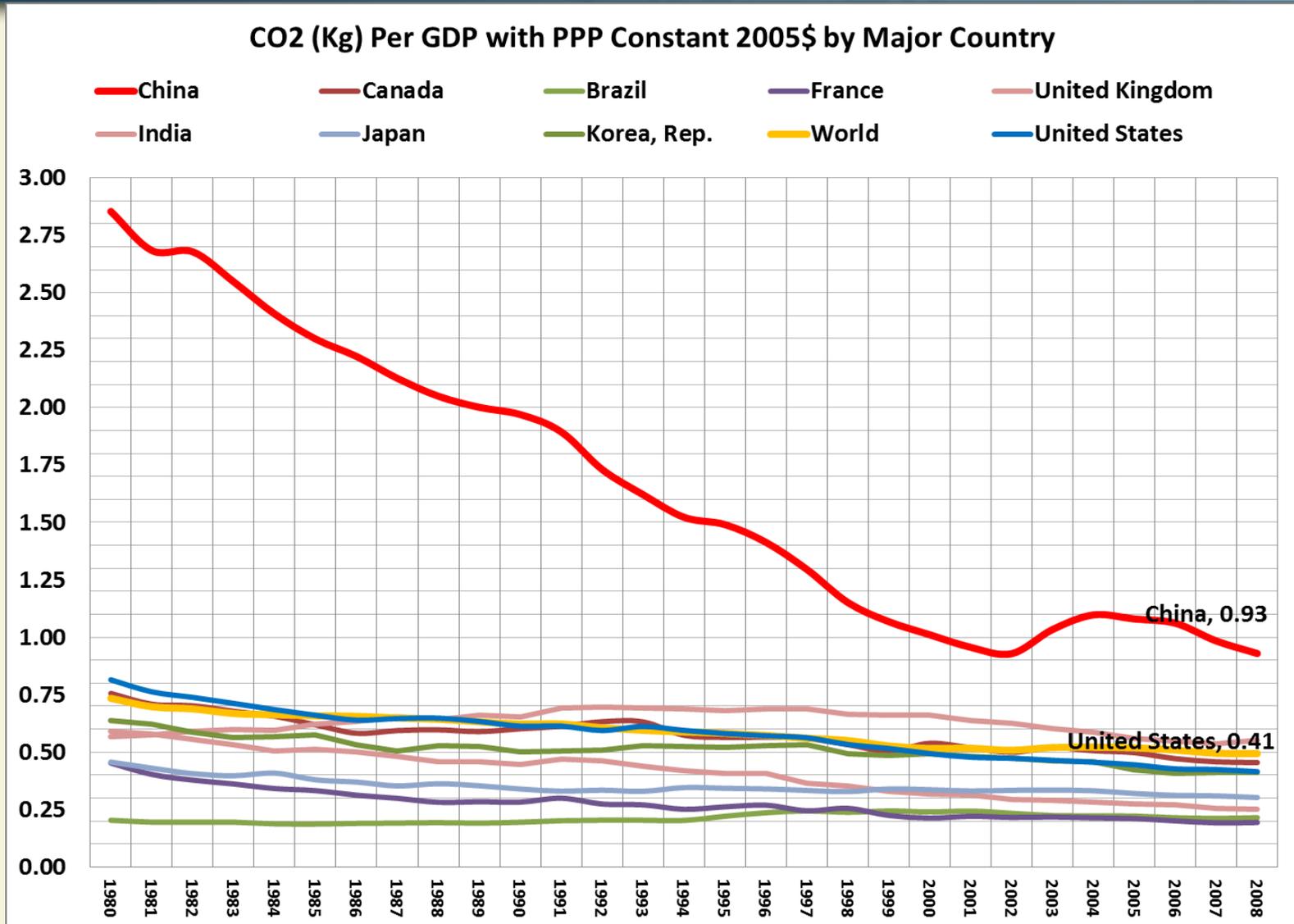
Modeling Parameters	2005 If available	2008 Base Year	2020		2035		Data Source(s)
			With Project ¹	Without Project ²	With Project ¹	Without Project ²	
VEHICLE MILES TRAVELED (000s)					[7]		SCAG Travel Demand Department
Total VMT per weekday for passenger vehicles (ARB vehicle classes of LDA, LDT1, LDT2 and MDV) (miles)	399,661	402,642	423,906	436,624	449,934	479,772	
Total internal VMT per weekday for passenger vehicles (miles)	365,374	370,542	385,802	398,560	404,872	430,318	
Total IX/XI VMT per weekday for passenger vehicles (miles)	31,269	29,490	35,100	35,075	41,850	45,892	
Total XX VMT per weekday for passenger vehicles (miles)	3,018	2,610	3,004	2,989	3,212	3,562	
CONGESTED TRAVEL MEASURES							SCAG Travel Demand Department
Congested weekday VMT on freeways (miles, V/C ratios > 1)	54,093	57,304	53,509	74,626	51,870	73,815	
Congested VMT on all other roadways (miles, V/C ratios > 1)	24,254	24,820	21,743	29,142	21,428	43,418	
CO2 EMISSIONS^[7] (000)							SCAG Travel Demand Department
Total CO2 emissions per weekday for passenger vehicles (ARB vehicle classes LDA, LDT1, LDT2, and MDV) (tons)	204.65	205.43	211.43	220.61	222.88	249.15	
Total Internal CO2 emissions per weekday for passenger vehicles (tons)	187.09	189.05	192.43	201.38	200.56	223.47	
Total IX / XI trip CO2 emissions per weekday for passenger vehicles (tons)	16.01	15.05	17.51	17.72	20.73	23.83	
Total XX trip CO2 emissions per weekday for passenger vehicles (tons)	1.55	1.33	1.50	1.51	1.59	1.85	

Modeling Parameters	2005 If available	2008 Base Year	2020		2035		Data Source(s)
			With Project ¹	Without Project ²	With Project ¹	Without Project ²	
INVESTMENT (Billions)							
Highway capacity expansion (\$)	Investment totals are evaluated for the entire duration of the Plan through the horizon year, not for a single year.				\$72.30	N/A	Draft 2012 RTP
Other road capacity expansion (\$)	N/A	N/A	N/A	N/A	\$22.10	N/A	Draft 2012 RTP
Transit capacity expansion (\$)	N/A	N/A	N/A	N/A	\$101.20	N/A	Draft 2012 RTP
Bus transit capacity expansion (\$)	N/A	N/A	N/A	N/A	included in above	N/A	Draft 2012 RTP
Transit operations (\$)	N/A	N/A	N/A	N/A	\$139.30	N/A	Draft 2012 RTP
Rail transit operations (\$)	N/A	N/A	N/A	N/A	included in above	N/A	Draft 2012 RTP
Bike and pedestrian projects (\$)	N/A	N/A	N/A	N/A	\$6.00	N/A	Draft 2012 RTP
Other (\$)	N/A	N/A	N/A	N/A	\$183.80	N/A	Draft 2012 RTP
TRANSPORTATION USER COSTS AND PRICING							
Vehicle operating costs (cents per mile; year 1999 constant \$)	17.45	20.63	23.47	23.47	23.77	23.77	SCAG Travel Demand Department
Gasoline price (\$2009 per gallon)	2.79	3.6	4.74	4.74	5.24	5.24	
Parking price (\$ per day)	N/A	N/A	N/A	N/A	N/A	N/A	Draft 2012 RTP
Toll price (\$)	N/A	N/A	N/A	N/A	N/A	appx. \$0.20 to \$0.50 per mile on various toll facilities-- depends on facility	Draft 2012 RTP
Congestion price (\$ per mile)	N/A	N/A	N/A	N/A	N/A	appx. \$0.02per mile VMT starting 2025-- depends on facility	Draft 2012 RTP

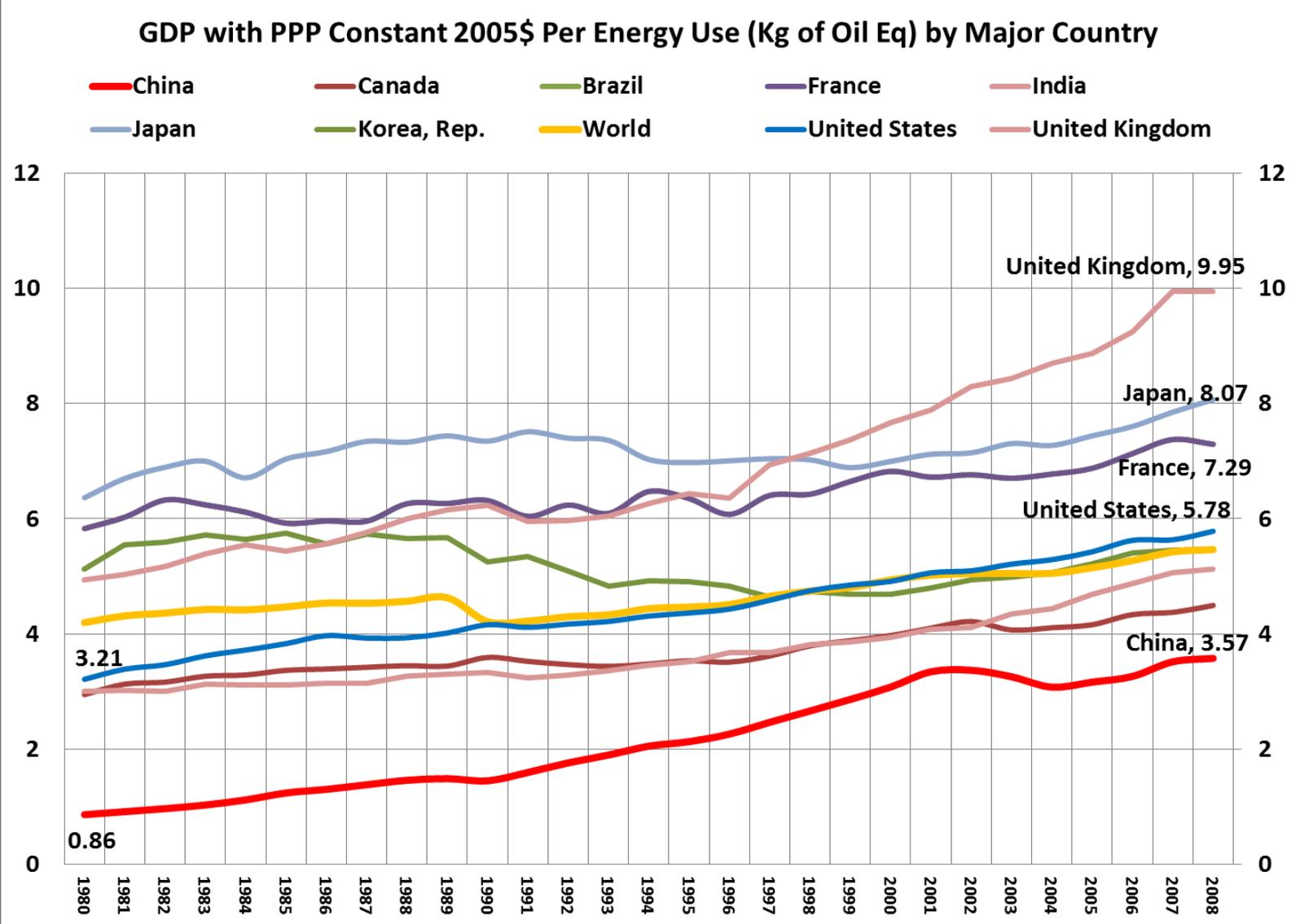
Total CO2 Emissions (1990 = 100) by Major Country



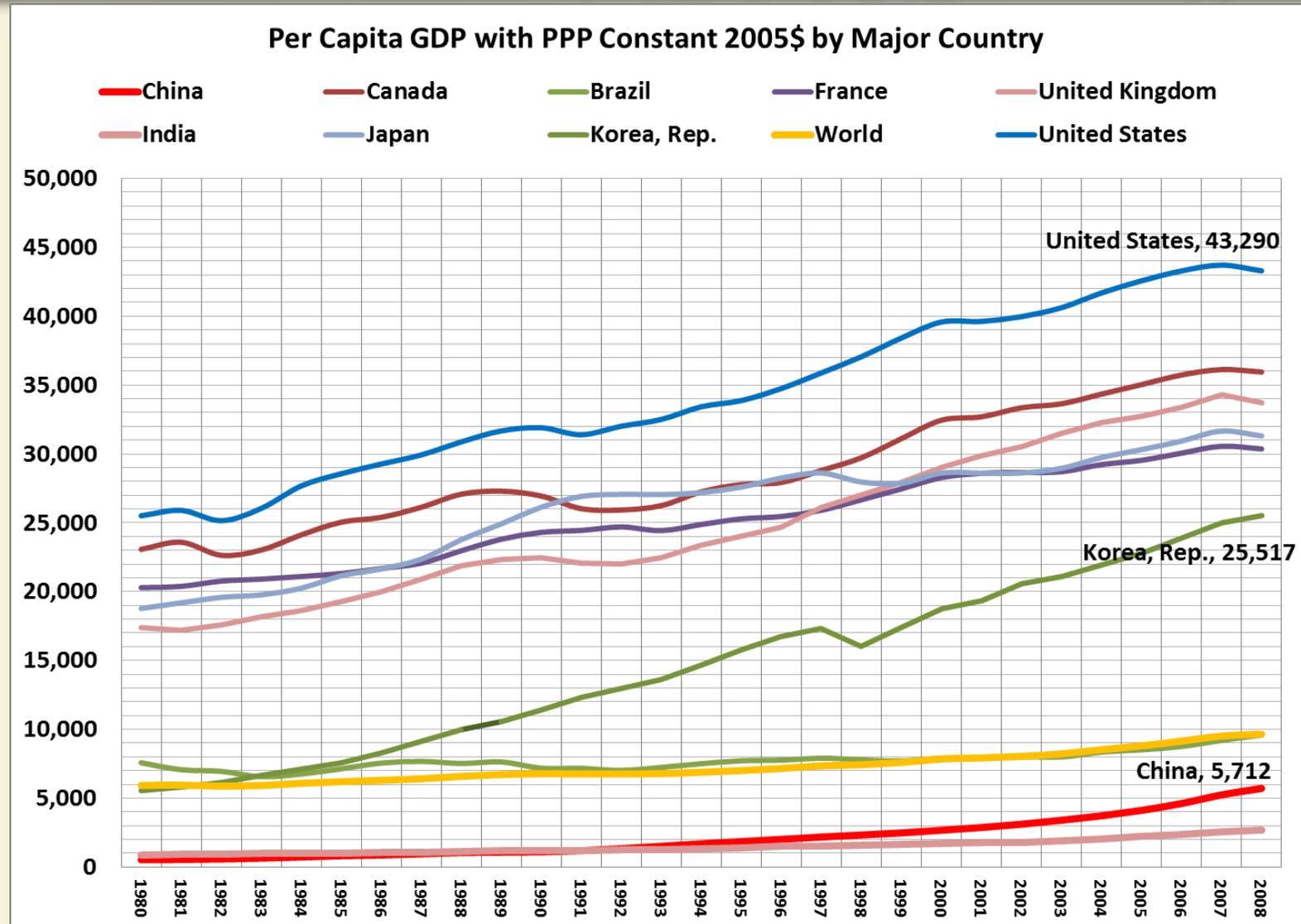
CO2 (Kg) Per GDP with PPP Constant 2005\$ by Major Country

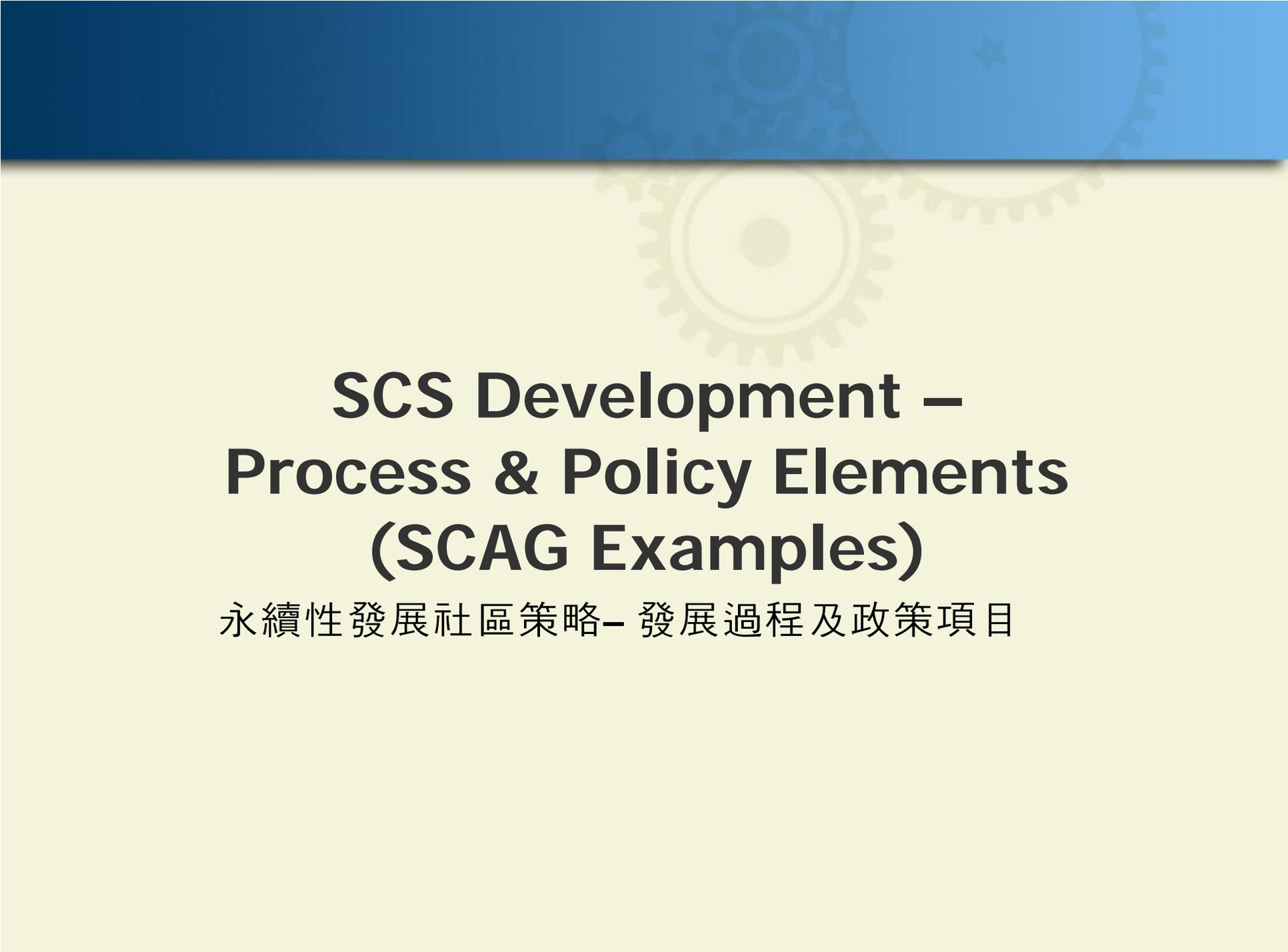


GDP with PPP Constant 2005\$ Per Energy Use (Kg of Oil Equivalent) by Major Country



Per Capita GDP with PPP Constant 2005\$ by Major Country



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SCS Development – Process & Policy Elements (SCAG Examples)

永續性發展社區策略– 發展過程及政策項目

SCS/RTP Development Process

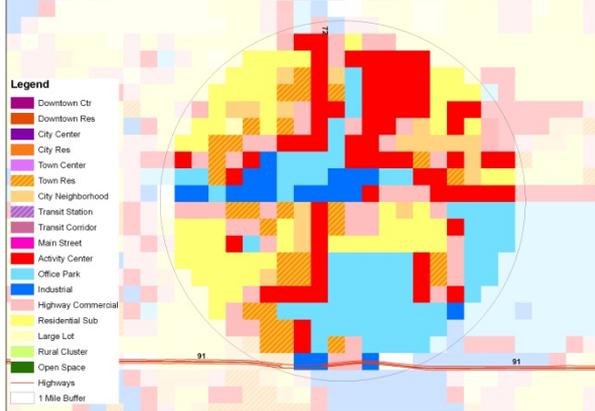
南加州都會區交通發展計劃及永續性發展社區策略



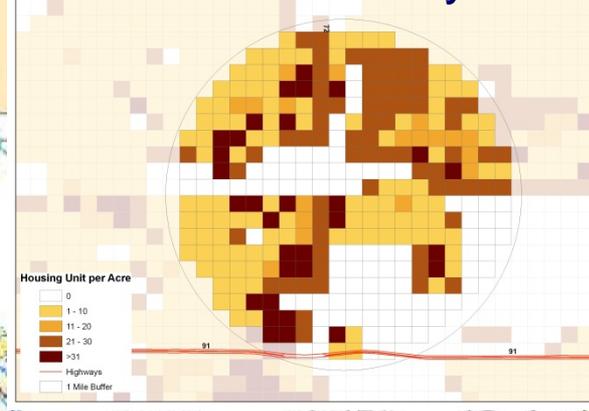
- 25-year long-range transportation plan for the region
- Developed and updated every 4 years
- 2008 RTP: \$531.5 billion in transportation projects
- 2012-2035 RTP adopted in April 2012
- As required by SB 375, the SCS includes 8 required elements aiming to better integrate regional and local land use & housing strategies with transportation investments and transportation policies to achieve the state's greenhouse gas emissions (GHG) reduction targets

1. Identify Existing Land Use Information 認定現有土地使用

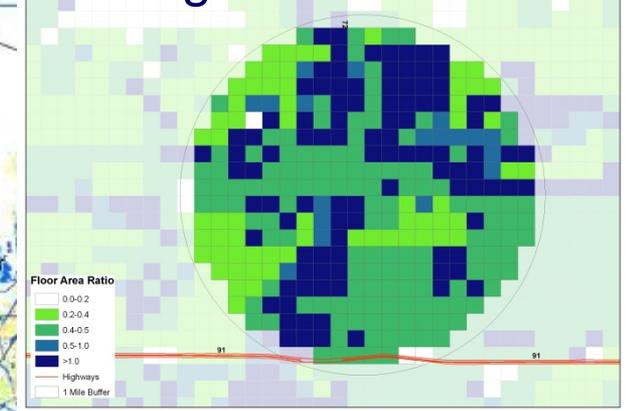
Location of Uses 地目



Residential Density 密度



Building Intensities 建蔽率



2, 3 & 6. Identify Short- and Long-Term Housing Development Areas and Consider State Housing Goals

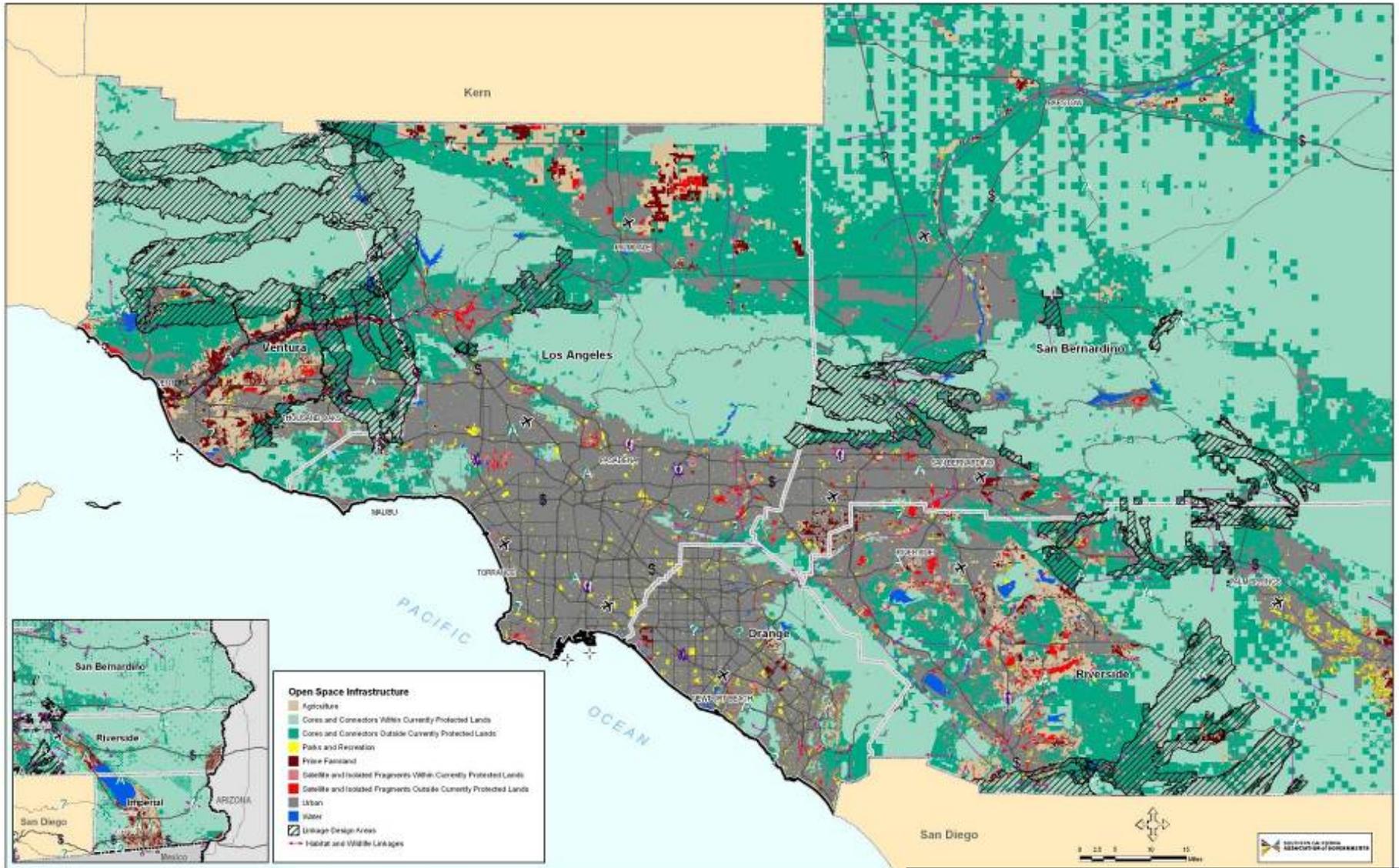
確認短期,長期住宅發展區域

- Identify areas sufficient to house all the population of the region, including all economic segments over the RTP planning timeframe
- Identify areas sufficient to house an 8-year projection of the regional housing need
- Ensure consistency with state housing goals



5. Consider Resources Areas and Farmland Information

保育維護資源區域和農業用地



7. Create a Forecasted Development Pattern Integrated with the Transportation Network that Reduces GHG Emissions (2020)

設計預測未來發展及土地使用方向當與交通網路
結合可減低排炭量

(1,000)	2020 Baseline		2020 Draft Policy	
	Household	Employment	Household	Employment
IM	82	106	81	103
LA	3,666	4,755	3,689	4,778
OR	1,088	1,897	1,089	1,872
RV	913	1,042	913	1,035
SB	787	966	765	981
VN	303	417	303	414
Region	6,840	9,183	6,840	9,183

8. Ensure the RTP/SCS to comply with federal transportation conformity requirements*

符合聯邦空氣排放標準

* Clean Air Act Sec 176

SCS Development Process

永續性發展社區策略-- 發展過程

- Key Stakeholders 利益團體運作過程
 - Cities and counties
 - County Transportation Commissions
 - Subregions
 - Respective state agencies
 - Building industries and development communities 建築業及開發商
 - Affordable housing 平價住宅
 - Air quality
 - Public health 公共健康
 - Environmental justice 公平和環境正義的考量: 少數及弱勢族群包括少數族裔及低收入

SCS Development Process (cont'd)

- Recognizes the diversity of communities
- Bottom-up process for all SCS development phases including:
 - Informational workshops
 - Growth forecast and future land use pattern
 - Target setting for GHG reductions
 - Strategies development
- More than 100 workshops and outreach meetings held

SCS Policy Elements

永續性發展社區策略- 政策項目

1. Land Use 土地使用及發展方向和區域
2. Transportation Network (交通運輸網投資建設)
3. Travel Demand Management (TDM) 交通需求管理
4. Transportation System Management (TSM) 交通系統流量管理
5. Active or Non-Motorized Transportation System 主動運輸
6. Transit 公共運輸捷運系統
7. Pricing 以市場價格調整需求

SCS Policy Elements – Examples

- Region-wide transit systems (enhanced capacity, service miles, and ridership)
- Regional centers (improved job-housing balance)
- Transit-oriented development
 - Housing increment in TPP areas (2008 – 2035) = 51%
 - Employment increment in TPP areas (2008 – 2035) = 53%
 - TPP areas are only 2.8% of the SCAG region
- Transit-ready development
- Neighborhood-oriented design
- Complete community design
- Complemented by active transportation facilities
- Compact new housing (2 out of 3 multifamily/townhouse)
- Zero-emission vehicle infrastructure (contribute to additional benefit beyond the state requirement)

Integrated Land Use Planning



Land Use Strategies



Outcomes & Benefit

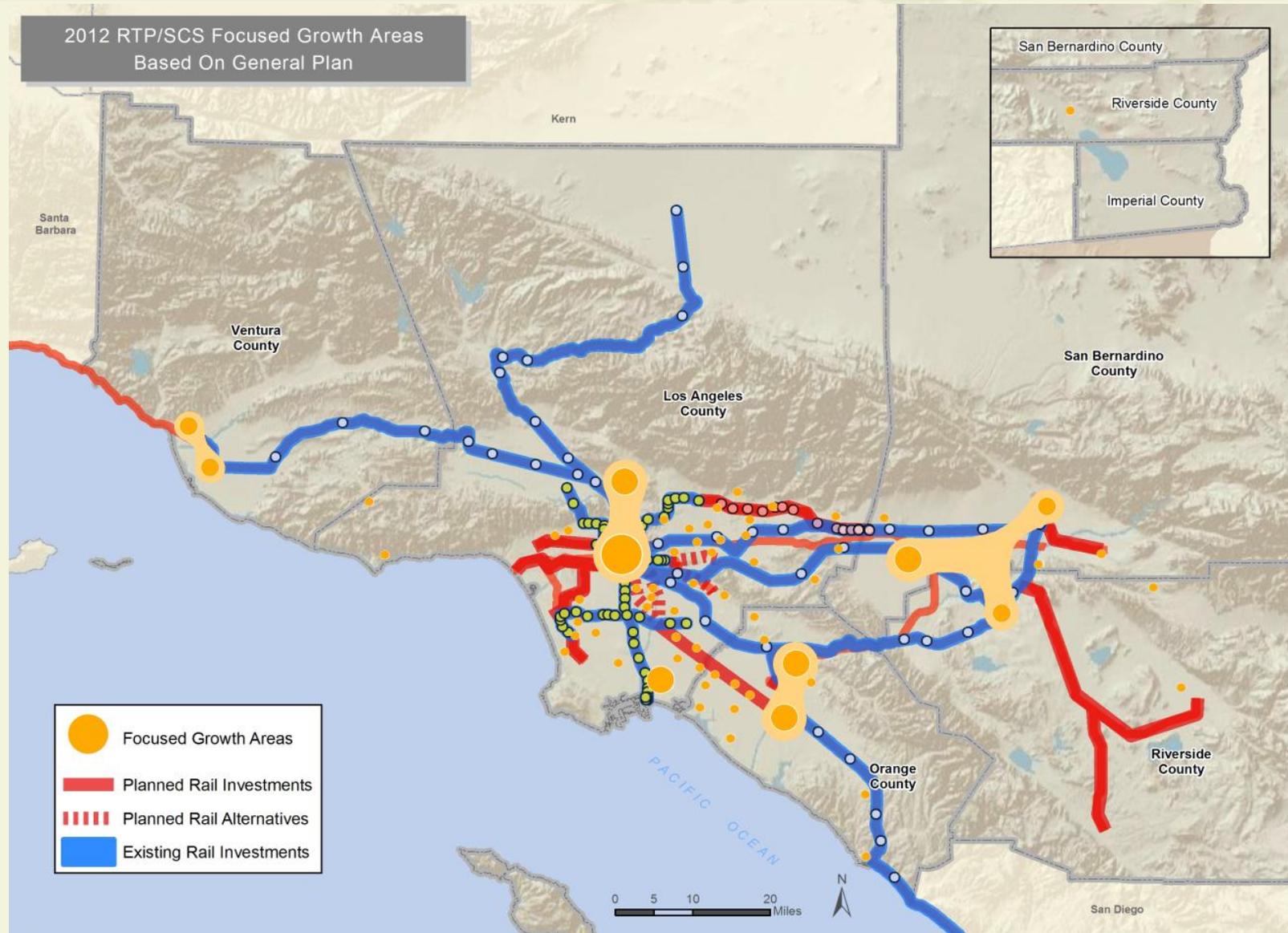
Jobs – Housing Balance
Higher Density / Mixed-Use
Pedestrian Friendly
Transit Orientation
Development Location, Type and Size
Preservation of Resources Areas
Increase Pervious Surfaces
Industrial / Brownfield Conversion
Improved Sense of Place



More Transit & Walk/Bike Trips
Fewer & Shorter Auto Trips
Less VMT & Congestion
More Affordable Housing
Improved Air Quality
Less Runoff / Better Water Quality
Decreased Energy & Water Consumption
Better Public Health



2012 RTP/SCS Focused Growth Areas



SCAG

2012-2035 RTP/SCS

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2012-2035 Regional Transportation Plan (RTP)/ Sustainable Communities Strategy (SCS)



- Respond to growing segments of the market demand due to demographic changes
- Integrate planning of land use, transportation and housing
- Address greenhouse gas reduction targets
- Contribute to a more sustainable region that benefits the environment, economy, consumers and developers

What - RTP/SCS

- Accommodate over 4 million additional residents
- Invest \$525 billion in transportation
- Make most capital investment in transit
- Triple investment in active transportation
- Focus growth in high quality transit areas
- Invest in clean fuel/technology truck corridors
- Enhance the LOSSAN Corridor
- Account for 500,000 jobs per year

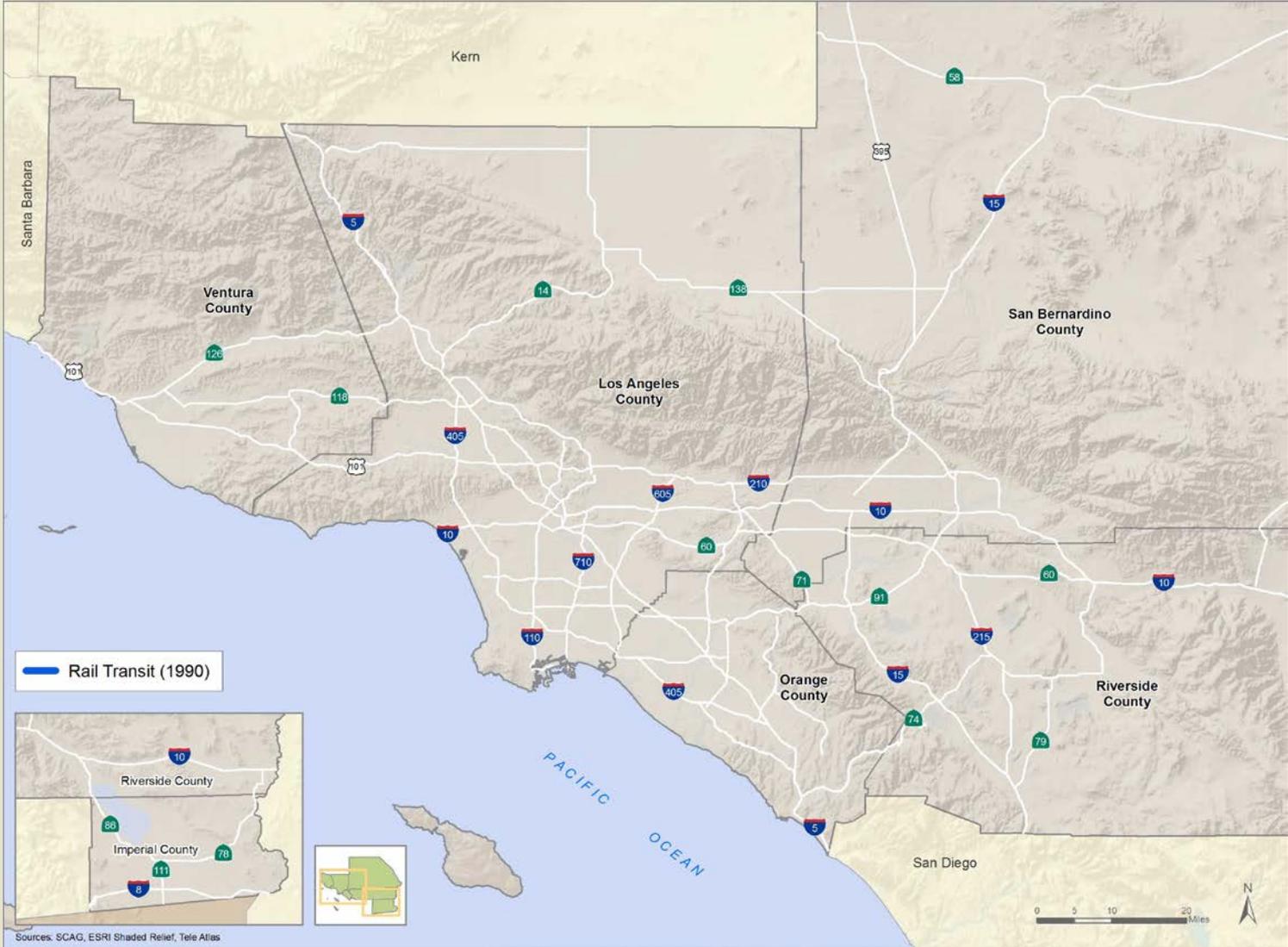
3 Key RTP/SCS Strategies

allocate
ONLY 13%
capital investment
to highways

focus over
50%
growth within
3%
land area

FROM 7:3
single- vs. multi-
family units
TO 3:7

Rail Transit Investments 1990



High Quality Transit Areas (2035)

focus over
50%
growth within
3%
land area

From 7:3
single- vs. multi-
family units
To 3:7



Sources: SCAG, ESRI Shaded Relief, Tele Atlas. HQTA: High-Quality Transit Opportunity Areas

Transit and Passenger Rail

Capital
(Transit)

\$49.7 billion

New
BRT
Light Rail
Heavy Rail
Bus
routes, extensions,
and service
enhancements

Capital
(Passenger Rail)

\$51.6 billion

Metrolink
extensions &
speed
improvements
LOSSAN
speed
improvements
California HST
Phase 1

Operations & Maintenance: \$139.3 billion

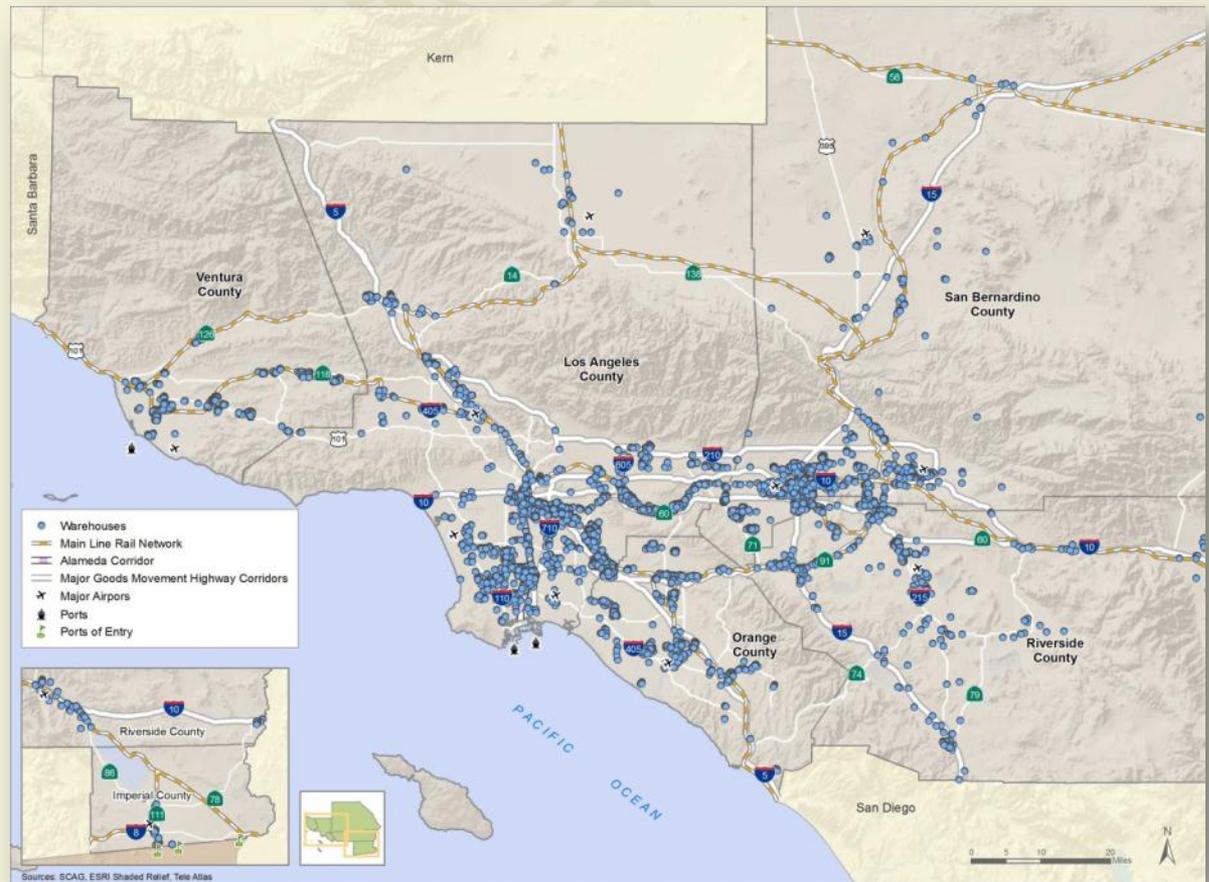


Goods Movement

Grade Separations and Goods Movement

\$47.9 billion

- Port access
- Freight rail capacity
- Grade separations
- Truck mobility improvements
- Intermodal facilities
- Emission reduction strategies



Transportation Demand Management

Active Transportation

TDM

\$4 billion

Reduce solo driving
Incentive carpooling, transit, biking, walking, flexible work schedules, telecommuting, First Mile/Last Mile strategies

Active Transportation

\$6.7 billion

Bikeways increase from 4,615 to 10,422 miles

Other strategies and safety improvements



SCAG's Adopted 2012-2035 RTP Exceeding Requirements

State Mandate SB 375 GHG Reduction

Year	Target	2012 RTP/SCS Results
2020	8%	9%
2035	13%	16%

Federal Mandate Air Quality Conformity

The 2012 RTP/SCS
**meets all air quality
conformity
requirements,**
including:
Fiscal constraint
Pollutant budgets

SCAG's Adopted 2012-2035 RTP Co-benefits

Mobility

Reduce per capita travel delay by **1/3**

Location Efficiency

Over **twice** as many households will live in high-quality transit opportunity areas

Economy

Over **500,000** jobs generated on average per year

Cost Effectiveness

\$2.90 return for every \$1 spent

SCAG's Adopted 2012 -2035 RTP Co-benefits

Land
Consumption

Decrease by
over
400
square
miles

Infrastructure
Costs

Total
savings over
\$5 billion

Household
Savings

Annual
savings of
\$3,400
per
household
in 2035

Health
Outcome

Reduce
Health
incidences
by
95,000
in 2035

New Programs and Subcommittees

Implementation Assistance for SCS

- Expanded Compass Blueprint
- Green Region Initiative
- General Plan Update Assistance
- New Subcommittees in 6 focus areas
 1. Transit/High speed Rail
 2. Active Transportation
 3. Goods Movement
 4. Transportation Finance
 5. Public Health
 6. Sustainability





Thank You!



REGIONAL TRANSPORTATION PLAN

2012-2035

SUSTAINABLE COMMUNITIES STRATEGY

Towards a Sustainable Future

RTP